

Design Standards Team

An Informational Overview

The Design Standards Team is a branch of the Washington State Department of Transportation Headquarters Design Policy, Standards, and Safety Research Unit in Olympia. It develops the contents of the *Standard Plans Manual*, preserves the Standard Plan Archive, maintains the Plan Sheet Library, and provides graphical support for various departmental publications, documents, and presentations.

Standard Plans

The *Standard Plans for Road, Bridge, and Municipal Construction (M 21-01)* is updated continuously. Changes in laws, regulations, and policies prompt these revisions, as do the requirements to keep pace with evolving technology and to align with policy documents from federal transportation agencies. The Design Standards Team has lead responsibility for keeping this manual current.

Project contracts refer to individual plans, and the *Standard Specifications* refer to the contents of the Standard Plans Manual in general. In addition to being a legal document referred to during project construction, this manual is also used in the Plans, Specifications & Estimates (PS&E) phase. The plans in this set agree with and complement statewide design (*Design Manual*) and construction policies.

Although a plan or revision may begin life simply enough as an identified need, it will undergo rigorous processing before it is included in the manual. This may involve at some level, subject matter experts in:

materials, structures, traffic, construction, environmental, project control & reporting, strategic planning and programming, maintenance and operations, transit, and others. If these individual disciplines are not involved as subject matter experts in the initial plan development, they are still called upon in a review capacity. Then there is a general statewide submittal for review within not only the department, but also extending to other agencies such as the American Public Works Association. After responding to those comments, application is made for its approval by the Division Office of the Federal Highway Administration (FHWA). Finally, shaped in its evolution in an effort to ally all concerns, first signed through the stamp by a licensed engineer, then signed by the State Design Engineer approving it for publication, a Future Standard Plan is produced.

Future Standard Plans are those approved for publication by the State Design Engineer yet are awaiting the next installment of a revision package (roughly an eight month cycle) before they may be referenced from a contract. These are located on the Design Standards Website as they become approved. Because they are new or supersede existing Standard Plans, familiarity with this set is indicated during current project design. A Future Standard Plan may be included in a forthcoming contract as a detail sheet.

The **Standard Plans Manual Archive** is a recent service provided to facilitate finding the valid Standard Plans as referenced in a project's contract. Individual plans may vary in their content with each successive revision package / manual version, and are identified by their Approved for Publication signature date. Because the manual is loose leaf, allowing it to be renewed, outdated plans are (expectedly) discarded while (paradoxically) they might still

be needed. It is at times necessary to produce the intended version of a Standard Plan for a particular contract. The General Special Provisions within the contract states inclusion of the *Standard Plans Manual* and specifies which one by its effective date. Listed by this date, complete preceding manuals are now available through the Design Standards Website.

Plan Sheet Library

This resource, also accessed through the Design Standards Website, provides drawings that are precluded from adoption as Standard Plans. These details, plans, or layouts may be used whole or in part as an aid to contract plan set composition. Among this collection may be introductory or experimental items where the intent is design direction/guidance, site-specific details requiring some customization, obsolete Standard Plans that have details still necessary for repair/maintenance or extension activities, Local Agency details (excluded from state application), etc. A special effort to control or qualify the use of an item, or to assure its distribution and availability, would also place it here. Developed in collaboration with engineering specialists and reviewed by the Headquarters Design Office, these drawings fully comply with present design criteria. Each drawing is featured on an individual web page with any necessary description, explanation, statement of intended use, comments, caveats, etc. There is also an illustration or photo of the item, and links to electronic versions of the plan and any special provision.

What is a standard plan?

The *Standard Specifications for Road, Bridge, and Municipal Construction 2006* defines **Standard Plans** as "A manual of specific plans

or drawings adopted by the Contracting Agency which show frequently recurring components of work that have been standardized for use”.

The **Washington Federal-Aid Stewardship Agreement of 2001** states that, “FHWA approval is required for all standard plans, amendments, and general special provisions, intended for use on Federal-aid construction projects on the NHS.”

The Department of Licensing requires that all plans stamped and signed by a Professional Engineer must be developed under the direct supervision of that engineer. Said engineer must be knowledgeable in that specific area of engineering. All standard plans are stamped; therefore, each must comply with these stipulations.

Each Standard Plan must adhere to WSDOT Design Policies, the Stewardship Agreement, construction practices, and the Department of Licensing requirements.

A standard plan as a statement of **Design Policy** must comply with the following:

- WSDOT *Design Manual*
- WSDOT *Local Agency Guidelines* (LAG) Manual
- WSDOT *Bridge Design Manual*
- WSDOT *Hydraulics Manual*
- WSDOT *Roadside Manual*
- AASHTO *A Policy on Geometric Design of Highways and Streets*
- AASHTO *Roadside Design Guide*
- AASHTO LRFD Bridge Design Specifications
- AASHTO Standard Specifications for Structural Supports
- ADAAG guidelines for ADA accessibility

- US DOT *Manual on Uniform Traffic Control Devices*
- Washington State Building Code
- National Electrical Code
- NCHRP (National Cooperative Highway Research Program) Report 350
- Revised Code of Washington (state laws)
- APWA (American Public Works Association) standards
- WA State Department of Labor and Industries worker safety regulations
- WA State Department of Licensing PE stamping requirements
- Various National design publications for special user groups (Pedestrians, Cyclists, Transit, etc.)

A standard plan as a **Construction Standard** must comply with the following:

- WSDOT *Standard Specifications for Road, Bridge, and Municipal Construction*
- Amendments to the Standard Specifications and General Special Provisions
- WSDOT *Construction Manual*
- WSDOT *Plans Preparation Manual*
- WSDOT *Sign Fabrication Manual*
- WSDOT Qualified Products List
- WSDOT Modifications to the MUTCD
- ASTM (American Society for Testing and Materials) specifications
- Various Trade Association construction requirements

Resources:

Design Standards Website for electronic versions of the WSDOT Standard Plans, Future Standard Plans, Standard Plans Manual Archive, and the Plan Sheet Library.
<http://www.wsdot.wa.gov/design/standards>

WSDOT Engineering Publications for printed copy of *Standard Plans Manual* (360) 705-7430.

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